REMARKS

This Amendment cancels claims 1-22, adds new claims 23-44 and amends the specification. New claims 23-44 generally correspond to canceled claims 1-22. The changes to the specification are merely editorial corrections. A version with markings to show changes made is attached as an Appendix. Claims 23-44 are pending.

This Amendment overcomes the objection to the disclosure. More particularly, the informalities noted in paragraph No. 3 on page 3 of the Official Action have been corrected with respect to page 4 of the specification.

However, page 14, line 14, does not contain "2...6". In this regard, there are numerous places in the specification where triple periods are used to denote a range. It is respectfully submitted that one of ordinary skill in the art would have no difficulty whatsoever in understanding the specification as originally filed.

Moreover, the formula appearing on page 4, line 13 is correct. The R′ and R″ groups are substituents of the Si atom, and the Si atom is always bonded to poly(alkylene oxide) groups, which are represented on page 5. Thus there is no silane linkage in the polymer chain.

Reconsideration and withdrawal of the objection to the disclosure are earnestly requested.

This Amendment also overcomes the objection to claims 1-22. These claims have been canceled in favor of new claims 23-44, which have been drafted to avoid the informalities noted in paragraph No. 4 on page 3 of the Official Action. Examiner Peng is thanked for his helpful suggestions, many of which have been adopted. However, new claim 42 (corresponding to canceled claim 20) is not objectionable merely because it defines R' differently depending on whether it appears in the first block or the second block. Reconsideration and withdrawal of the objection to claims 1-22, to the extent it may be applied against pending claims 23-44, are earnestly requested.

This Amendment also overcomes the 35 U.S.C. § 112, second paragraph, rejection of claims 4, 5 and 20-22. These claims have been canceled in favor of new claims 26, 27 and 42-44, which have been drafted to avoid both broad and narrow ranges. The new claims have been drafted using -- polysiloxane groups -- rather than "polysiloxane units", and are believed to provide proper antecedent basis for all claim terms. Reconsideration and withdrawal of the indefiniteness rejection of claims 4, 5, and 20-22, to the extent it may be applied against pending claims 23-44, are earnestly requested.

The objection to the specification is respectfully traversed. Graft and block copolymers are well known to those of ordinary

skill in the art, who would understand "blocks" to refer to blocks of alkylene oxide groups within the siloxane elastomer, and that the "blocks" and "polysiloxane groups" together make up the siloxane elastomer. Similarly, one of ordinary skill in the art would understand "mixture of these forms" to refer to a mixture of alkylene oxide groups present as alkoxy-terminated grafts of polysiloxane groups and alkylene oxide groups present as blocks within the siloxane elastomer.

Similarly, those of ordinary skill in the art would understand "partly free groups" and "partly bonds" to mean that a portion of R' and R" comprise groups which may be substituted or unsubstituted lower alkyl, phenyl or alkoxy-terminated poly(alkylene oxide) groups of specified formula, and that another portion of R' and R" comprise crosslinking bonds to other chains in the elastomer. "Possibly partly unreacted groups" means that yet another portion of R' and R" may comprise groups which did not react to form crosslinks. Finally, those of ordinary skill in the art would understand "free groups" to mean that the groups are not joined by bonds to other chains in the elastomer.

Reconsideration and withdrawal of the objection to the specification are earnestly requested.

This Amendment also overcomes the 35 U.S.C. § 112, first paragraph, rejection of claims 1-17. More particularly, these

claims have been canceled in favor of new claims which employ siloxane elastomer rather than siloxane-based elastomer. Similarly, polysiloxane units has been changed to polysiloxane groups in the new claims.

The claims are fully enabled by the specification. As discussed above, graft and block copolymers are well known to those of ordinary skill in the art, who would understand "blocks" to refer to blocks of alkylene oxide groups within the siloxane elastomer, and that the "blocks" and "polysiloxane groups" together make up the siloxane elastomer. One of ordinary skill in the art would understand "mixture of these forms" to refer to a mixture of alkylene oxide groups present as alkoxy-terminated grafts of polysiloxane groups and alkylene oxide groups present as blocks within the siloxane elastomer.

Similarly, those of ordinary skill in the art would understand "partly free groups" and "partly bonds" to mean that a portion of R′ and R″ comprise groups which may be substituted or unsubstituted lower alkyl, phenyl or alkoxy-terminated poly(alkylene oxide) groups of specified formula, and that another portion of R′ and R″ comprise crosslinking bonds to other chains in the elastomer. "Possibly partly unreacted groups" means that yet another portion of R′ and R″ may comprise groups which did not react to form crosslinks. Finally, those of ordinary skill in the art would

understand "free groups" to mean that the groups are not joined by bonds to other chains in the elastomer.

Reconsideration and withdrawal of the non-enablement rejection of claims 1-17 are earnestly requested.

This Amendment overcomes the 35 U.S.C. § 102(b) rejection of claims 1-9, 17 and 18 over U.S. Patent No. 4,600,751 to Lee. A feature of the claimed invention is that it is either a membrane or a matrix.

In contrast, the elastomer disclosed in Lee et al. cannot be made into a matrix or membrane. Indeed, according to Tables 1 and 2 of the cited document, when the elastomer composition contains no monomer (Examples 1 and 2, MMA content is 0%), the physical properties of its elastomer are insufficient for such use, indicating in fact that the product obtained in Examples 1 and 2 is not an elastomer. In Table 2, it is shown that it has not been possible to measure for example the tensile strength of the elastomer. The best properties in this respect are achieved when there is 40% of MMA (leading to an elongation at break of 140%), whereas with the elastomers according to the present invention, it is possible to achieve elongations at break in order of 500 to 600% at 9 Mpa. Please consider the enclosed experimental data where the values are those measured from the grips (N.B. When the measuring is not specified, it is expected to be by extensometer which gives

larger values as result). Thus, the method according to Lee et al. requires the use of additional monomer to crosslink the polymer to form an elastomer.

In view of the above, it is believed that the matrix or membrane according to the present invention is both novel and non-obvious in view of Lee et al. It is further believed that the method according to the present invention is also novel and non-obvious in view of Lee et al. Indeed, the present method has been limited in that there is no monomer present in the crosslinking reaction of the starting materials to form an elastomer (the hydride functional component of the present invention is not comparable to a monomer, since two hydride functional components do not react with each other). Lee et al. does not disclose this embodiment, since in Lee et al., there is always monomer present and the monomer forms the crosslinking unit. Lee et al. does not give any indication that it would be possible to achieve the process according to the present invention by omitting the monomer.

Reconsideration and withdrawal of the anticipation rejection of claims 1-9, 17 and 18 over Lee et al. are earnestly requested.

The 35 U.S.C. § 102(b) rejection of claims 1-8, 10-18 and 20-22 over U.S. Patent No. 6,013,711 to Lewis is traversed. A feature of the claimed membrane or matrix is that it comprises a block

elastomer or a block-graft elastomers, with the elastomer having at least three blocks of poly(alkylene oxide) in the chain.

Lewis et al. fails to disclose these features of the claimed membrane or matrix. Instead, this reference discloses grafted elastomers as well as one two-block elastomer (formula F on column 8, having the formula OH-PA-PDMS-PAO-OH, PAO=poly(alkylene oxide)). Lewis et al. does not disclose an elastomer comprising both blocks and grafts.

The siloxane-polyether copolymers in Lewis et al. are prepared according to US application 09/082,563 (US patent 6,103,847). The process described in said document cannot however be used for preparing the multiblock elastomers according to the present invention, or for preparing the block-graft-elastomers according to the invention, since the sole examples of polymers having poly(alkylene oxide) blocks are hydroxy-terminated, and thus cannot be crosslinked according to the present invention. Lewis et al. does not disclose crosslinking with peroxide. The present method is thus both novel and inventive over Lewis et al.

Reconsideration and withdrawal of the anticipation rejection of claims 1-8, 10-18 and 20-22 over Lewis et al. are earnestly requested.

The 35 U.S.C. § 103(a) rejection of claim 19 over Lewis et al. is traversed. Claim 19 (now claim 41) depends from method claim 18

(now claim 30), and is patentable over Lewis et al. for at least the reasons set forth above. Reconsideration and withdrawal of the obviousness rejection of claim 19 are earnestly requested.

A Supplemental Information Disclosure Statement is attached, and cross-discloses copending, commonly-assigned application S.N. 09/472,126.

It is believed that the application is in condition for allowance. Reconsideration and withdrawal of all rejections of claims 1-22, and issuance of a Notice of Allowance directed to claims 23-44, are earnestly requested. The Examiner is urged to telephone the undersigned should he believe any further action is required for allowance.

A Petition and fee for a three month Extension of Time is attached. It is not believed that any additional fee is required for entry and consideration of this Amendment. Nevertheless, the

Director is authorized to charge our Deposit Account No. 50-1258 in the amount of any such required fee.

Respectfully submitted,

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Enclosures:
- Appendix
- Experimental Data
- Petition for Extension of Time
- Supplemental Information Disclosure Statement

Appendix

Version With Markings To Show Changes Made

IN THE SPECIFICATION:

The paragraph beginning at page 4, line 11 has been rewritten as follows:

The polysiloxane units of the elastomer composition are preferably groups having the formula

$$-(SiR'R''O)_qSiR'R''-$$

where R′ and R″ are

- partly free groups, which are the same or different and which are a lower alkyl group, or a phenyl group, in which case the said alkyl or phenyl group may be substituted or unsubstituted, or alkoxy-terminated poly(alkylene oxide) groups having the formula

$-R^3-O-(\underset{\displaystyle R}{\underset{|}{CH}}-CH_2-O)_m-alk$, where alk is a lower alkyl group, suitably methyl, R is hydrogen or a lower alkyl, m is [1...30] 1 to 30, and R^3 is a straight or branched C_2-C_6 [alkyl] alkylene group,

- partly bonds, formed from the hydrogen or alkylene groups to other polymer chains in the elastomer, and

- possibly partly unreacted groups, such as hydrogen, vinyl or vinyl-terminated alkene, and

- q is [1...3000] 1 to 3000.

IN THE CLAIMS:

Claims 1-22 have been canceled.

Claims 22-44 are new.

For your reference here are mechanical test results of an elastomer, where we have examined the effect of catalyst amount on the mechanical properties.

Materials:

Polymer component	100 pph (PEO-b-PDMS, $CH_2=CH(OCH_2CH_2)_3OCH_2CH_2[(SiMe_2O)_{10}SiMe_2\text{-}CH_2CH_2(OCH_2CH_2)_4]_{11}(SiMe_2O)_{10}SiMe_2CH_2CH_2(OCH_2CH_2)_3OCH=CH_2$
Crosslinker:	5,1 pph (XL-110 Nusil, hydride functional siloxane)
Catalyst:	As shown below (SIP 6831.0 Gelest, Pt(0)-divinyltetramethyldisiloxane complex in xylene)
Filler:	49 pph (silica, hydrophobic, no reactive -OH on the surface)
Inhibitor:	0.05 pph (ethynylcyclohexanol)

According to ISO 37, strain measured from the grips (gives lower strain than when measured with extensometer)